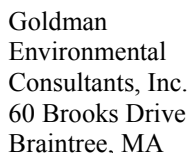


APPENDIX I:

Boring Logs



Project:
169.2 Bridge Street (150 Massmills
Drive), Lowell, MA
GEC project 1785-5040
Boring Log ID: B-1/ GEC-1

Sheet: 1 of 1

Boring Location 3.5' from edge of Picker Building and 63'
from concrete ledge along Concord River

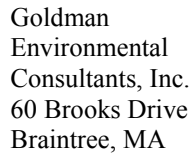
Drilling Method: Geoprobe 6620DT Track mounted

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: Ion Science TIGER 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	PEN./REC.	DEPTH					
5'	1	60/34	0-5'	SILT	0-5' = 0.0 ppmv	S-1: Dry 0-34" Olive gray to light brown SILT containing urban fill material (brick, concrete pieces, roots, glass, coal ash), poorly sorted S-2: Dry 0-23" Light gray to yellowish orange SILT containing urban fill material (coal ash, brick, concrete) and some angular gravel shale pieces 23-25" Light gray CLAY, stiff 25-27" Yellowish-orange, fine to medium SAND, moderately sorted, subrounded 27-28" Olive gray to greenish gray CLAY, very stiff 28-30" Light gray fine to coarse SAND with fine to coarse gravel and urban fill material (ash, concrete), poorly sorted	Samples collected for laboratory analysis: B-1 (15-20') EPH/VPH	
10'	2	60/30	5-10'	CLAY/SAND	5-10' = 0.0 ppmv	S-3: Wet @ ~13' 0-3.5" Dark gray to yellowish-orange SILT containing urban fill material (brick, small (1-2") metal pieces, coal ash), poorly sorted, dry 3.5-8.5" Dark gray SILT with clay, little brick and coal ash, moist 8.5-11" Yellowish-orange SILT, well sorted, wet 11-13.5" Olive gray SILT with fine to coarse sand and clay, poorly sorted, wet S-4: Wet, petroleum stain/odor at ~19' 0-1" Olive gray SILT with fine to coarse sand and clay, poorly sorted 1-3" Light gray to yellowish orange SILT and CLAY, well sorted 3-19" Dark gray to yellowish orange SILT and CLAY with fine to coarse sand and some angular cobbles interbedded toward the bottom of the sequence, petroleum staining and odor toward end of sequence 19-22" Light gray fine SAND, well sorted, medium dense, possible gleying		
15'	3	60/13.5	10-15'	SILT	10-15' = 0.0 ppmv			
20'	4	60/22	15-20'	SILT/CLAY	15-20' = 0.0 PPMV			
20'				SAND				



Date of Work: 8-14-2015 **Sheet:** 1 of 1
Weather: High 70°F's, sunny, slight breeze
Boring Location 3.5' from edge of Picker Building and 45'
from concrete ledge along Concord River

Screening Equipment: Ion Science TIGER 10.6 eV PID

[illegible]



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60 Brooks Drive
Braintree, MA

Project:
169.2 Bridge Street (150 Massmills
Drive), Lowell, MA
GEC project 1785-5040
Boring Log ID: B-3/ GEC-2

Date of Work: 8-14-2015

Sheet: 1 of 1

Weather: High 70°F's, sunny, slight breeze

Boring Location: 8' south and 4' west of the southwest corner of the oil pump house

Boring Contractor: New England Geotech, LLC

Drilling Method: Geoprobe 6620DT Track mounted

Foreman: Maynor/Kyle

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

GEC Engineer: M. Bradley/A. Suding

Screening Equipment: Ion Science TIGER 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	PEN./REC.	DEPTH					
5'	1	60/45	0-5'	SILT	0-5' = 0.0 ppmv	S-1: Dry 0-13" Olive gray SILT containing urban fill material (brick, coal ash, concrete), moderately sorted 13-21" Light gray to yellowish orange fine SAND with little coarse sand, moderately sorted 21-45" Light gray to yellowish orange to dark gray URBAN FILL consisting of crushed concrete, coal ash, and brick and interbedded sand and clay	Samples collected for laboratory analysis: B-3 (15-20') EPH/VPH & B-3 (15-20') (25-28") Petroleum Fingerprint TPH 8015	
				SAND				
10'	2	60/31	5-10'	URBAN FILL	5-10' = 0.1 ppmv	S-2: Dry 0-31" Light gray to yellowish orange URBAN FILL consisting of crushed concrete and brick and interbedded silt, little clay		
15'	3	60/31.5	10-15'	SILT	10-15' = 0.1 ppmv	S-3: Dry to moist 0-5.5" Red brown crushed BRICK 5.5-24.5" Yellowish orange SILT, coarsening upward with clay at bottom of sequence, damp at 22" 24.5-31.5" Light gray crushed CONCRETE, moist		
20'	4	60/28	15-20'	CONCRETE	15-20' = 0.1 PPMV	S-4: Wet @ ~17.5', petroleum sheen/product 0-11.5" Light gray to yellowish orange SILT containing urban fill materials (crushed concrete, brick), stiff, moist 11.5-26" Olive gray to dark gray SILT, well sorted, stiff, wet at ~13", petroleum sheen and free product at 23-26" 26-28" Light gray SILT, well sorted, wet, possible gleying		
25'	5	60/43	20-25'	SILT	20-25' = 0.1 ppmv	S-5: Wet 0-43" Light gray SILT, well sorted, possible gleying		

B-3 completed as a 2" monitoring well to a depth of approximately 25' BSG with 13' of screen and ~15' of riser. Completed with 4" steel standpipe. Designated GEC-2.



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Project:
169.2 Bridge Street (150 Massmills
Drive), Lowell, MA
GEC project 1785-5040
Boring Log ID: B-4/ GEC-3

Date of Work: 8-14-2015

Sheet: 1 of 1

Weather: High 70°F's, sunny, slight breeze

Boring Location: 13' south and 5' east of the southeast corner of the oil pump house

Boring Contractor: New England Geotech, LLC

Drilling Method: Geoprobe 6620DT Track mounted

Foreman: Maynor/Kyle

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

GEC Engineer: M. Bradley/A. Suding

Screening Equipment: Ion Science TIGER 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	PEN./REC.	DEPTH					
5'	1	60/39	0-5'	SILT	0-5' = 0.0 ppmv	S-1: Dry 0-39" Dark gray to olive gray to yellowish orange SILT containing urban fill materials (coal ash, brick, crushed concrete) with fine to coarse sand and fine gravel, poorly sorted S-2: Dry to moist 0-3.5" Dark gray fine to medium SAND containing urban fill materials (crushed concrete, brick, coal ash) with fine gravel, poorly sorted, dry 3.5-11.5" Light gray crushed CONCRETE, dry 11.5-38.5" Light brown SILT with fine sand and angular gravel (possibly some metal pieces), moderately sorted, dry at top grading to moist at bottom S-3: Dry 0-41.5" Light gray to olive gray to yellowish orange URBAN FILL consisting of crushed concrete, brick, and coal ash with interbedded silt S-4: Dry to moist, petroleum sheen/odor 0-16" Light gray to yellowish orange SILT containing urban fill materials (crushed concrete, brick) 16-19" Olive gray to dark gray coarse SAND with fine subangular gravel and fine to medium sand, damp, petroleum sheen and odor 19-30" Light gray to dark gray to yellowish orange SILT, well sorted, moist S-5: Wet @ 20' 0-40" Light gray SILT, well sorted, stiff, wet, possible gleying	Samples collected for laboratory analysis: B-4 (15-20') EPH/VPH & B-4 (15-20')(21-24') Petroleum Fingerprint TPH 8015	
	2	60/38.5	5-10'	SAND	5-10' = 0.0 ppmv			
				CONCRETE				
				SILT				
10'	3	60/41.5	10-15'	URBAN FILL	10-15' = 0.0 ppmv			
15'	4	60/30	15-20'	SILT	15-20' = 0.0 PPMV			
				SAND				
20'	5	60/40	20-25'	SILT	20-25' = 0.0 ppmv			
B-4 completed as a 2" monitoring well to a depth of approximately 25' BSG with 14' of screen and ~14' of riser. Completed with 4" steel standpipe. Designated GEC-3.								

25'



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Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-5

Date of Work: 3-14-2016
Weather: 40°F's, overcast
Boring Location: Eastern side of courtyard

Sheet: 1 of 1

Boring Contractor: New England Geotech, LLC

Foreman: Maynor


GEC Engineer: D. Foley


Drilling Method: Geoprobe 6620DT Track mounted

Sampling: Various intervals with dedicated acetate Sleeves


Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/12	0-1'	URBAN FILL	Due to recovery no head-space was collected	S-1: Dry 0-12" Dark brown SAND & SILT & bits of Coal/ Ash/ Brick S-2: Dry 0-8" Dark brown SAND & SILT with Brick, Coal, Ash, tr organics 8-12" Gray GRAVEL w/ Sand, Silt, Ash, Coal, and Brick 12-16" Dark brown SAND & SILT w/ Ash, Coal, Brick S-3: Dry 0-26" Black COAL DUST w/ Ash and Brick, trace Sand, Silt S-4: Dry to moist, petroleum sheen/odor 0-36" Black COAL DUST w/ Sand , Silt, Ash, and Brick 36-44" Saturated Black Petroleum smeared Soils SAND, Silt, Coal, Ash, Brick	Samples collected for laboratory analysis: B-5 (0-1') PCBs & congeners B-5 (1-3') PCBs B-5 (0-3') MA14 Metals, EPH w/ PAHs, Pesticides/ Herbicides B-5 (3-6') PCBs B-5 (6-11') PCBs	No wells were constructed during this event
	2	24/16	1-3'					
	3	36/26"	3-6'					
	4	60/44	6-11'					
10'								
15'								
20'								

25'



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Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-6

Date of Work: 3-14-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: Eastern side of courtyard, near fuel oil vaults, Refusal multiple times at around 3' BSG

Boring Contractor: New England Geotech, LLC

Foreman: Maynor


GEC Engineer: D. Foley


Drilling Method: Geoprobe 6620DT Track mounted

Sampling: Various intervals with dedicated acetate Sleeves


Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

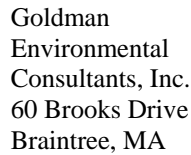
Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/12	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry 0-12" Dark brown SAND & SILT & bits of Coal/ Ash/ Brick S-2: refusal at Three Foot TEST PIT (0-1'), (1-2'), (2-3') All soils appear to be "URBAN FILL"	Samples collected for laboratory analysis: Due to multiple refusals GEC moved on to B-7, GEC had collected samples from a test pitting event on 3/9/2016 from the (0-1'),(1-2'), (2-3') intervals for the following analysis MA14 metals, PCBs, Pest/Herbicides	No wells were constructed during this event
10'								
15'								
20'								

25'



Date of Work: 3-14-2016 **Sheet:**
Weather: 40°F's, overcast
Boring Location: South west of the Pump House

Screening Equipment: MiniRae 3000 10.6 eV PID

[illegible]

25'



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Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-8

Date of Work: 3-14-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: Northwest of the Pump House

Boring Contractor: New England Geotech, LLC

Foreman: Maynor


GEC Engineer: D. Foley


Drilling Method: Geoprobe 6620DT Track mounted

Sampling: Various intervals with dedicated acetate Sleeves


Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/12"	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry 0-12" Dark brown SAND & SILT & Coal/ Ash/ Brick S-2: Dry 0-12" Brown/ dark brown F SAND& SILT w/ Brick, Coal, Ash 12-14" Black COAL, Ash, Brick 14-16" Brown w white BRICK, Coal, Ash w/ F Sand and Silt 16—24" Dark brown COAL w/ Brick, Ash, F Sand and Silt trace Pebble S-3: Dry 0-12" Brown F SAND & SILT w/ Ash, Coal, Brick 12-36" Dark brown COAL, ASH, BRICK w/ F Sand and Silt S-4: Dry 0-18" Brown F SAND w/ Silt Tr Brick, Coal, Ash 18-29" Tan-gray F SAND w/ Silt tr Brick and Coal 29-33 Gray-tan F SAND w/ tr Pebble and large pieces of Coal 33-36" Brown F-M Sand w/ tr Silt and tr Pebble	Samples collected for laboratory analysis: B-8 (0-1') PCBs B-8 (1-3') PCBs B-8 (3-6') PCBs B-8 (6-11') PCBs	No wells were constructed during this event
	2	24/24"	1-3'					
	3	36/30"	3-6'					
	4	60/36"	6-11'					
10'								
15'								
20'								

25'



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Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-9

Date of Work: 3-14-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: Northwest of the Smoke Stack

Boring Contractor: New England Geotech, LLC

Foreman: Maynor


GEC Engineer: D. Foley


Drilling Method: Geoprobe 6620DT Track mounted

Sampling: Various intervals with dedicated acetate Sleeves

Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

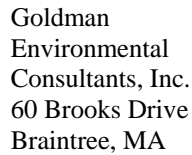
Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/12"	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry 0-12" Dark Brown F SAND & SILT w/ Shredded Plastic, Coal, Ash S-2: Dry 0-4" Black COAL DUST 4-12" Red pulverized BRICK w/ Ash 12-24" Dark brown COAL DUST, ASH BRICK w F-M Sand w/ tr Silt S-3: Dry 0-6" Tan-orange weather ROCK, w/ f-m-c Sand tr Coal 6-26" Dark brown- black COAL DUST w/ Ash, tr Brick f-m Sand and Silt S-4: Dry 0-8" Brown F SAND w/ tr Coal, Ash, Peb- ble, Coal Slag 8-16" orange (rusty) f-m SAND w/ Gravel 16-24" Brown F SAND w/ some Brick, Coal, Ash	Samples collected for laboratory analysis: B-9 (0-1') PCBs and congeners B-9 (1-3') PCBs B-9 (0-3') EPH with PAHs B-9 (3-6') PCBs MA14 Metals, Pesticide/ Herbicide B-9 (6-11') PCBs	No wells were constructed during this event
	2	24/24"	1-3'					
	3	36/26"	3-6'					
	4	60/24"	6-11'					
10'								
15'								
20'								

25'



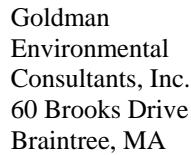
Date of Work: 3-14-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: Northwest of the coal elevator

Screening Equipment: MiniRae 3000 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]

25'



Date of Work: 3-14-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: Norther portion of the courtyard, near convergence of picker and Boiler house

Screening Equipment: MiniRae 3000 10.6 eV PID

[illegible]

25'



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Braintree, MA

Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-11-r10A

Date of Work: 3-30-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: Northwest of B-11 on a 10' radius

Boring Contractor: New England Geotech, LLC

Foreman: Maynor

GEC Engineer: D. Foley


Drilling Method: Hand Geoprobe

Sampling: Various intervals with dedicated acetate Sleeves

Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

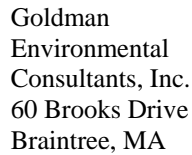
Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	6/0"	0-1'		Due to recovery no Headspace was collected	S-1: Dry 0-6" refusal X3- Due to presence of "flow-able" concrete on the ground surface	Samples collected for laboratory analysis: No Samples were collected from this location	No wells were constructed during this event
10'								
15'								
20'								

25'



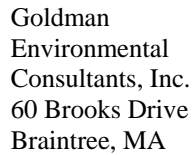
Date of Work: 3-30-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: Southeast of B-11 on a 10' radius

Screening Equipment: MiniRae 3000 10.6 eV PID

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

[illegible]

25'



Date of Work: 3-30-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: North of B-11 on a 5' radius

Screening Equipment: MiniRae 3000 10.6 eV PID

[illegible]

25'



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Braintree, MA

Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-11-r5B

Date of Work: 3-30-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: North east of B-11 on a 5' radius

Boring Contractor: New England Geotech, LLC

Foreman: Maynor

GEC Engineer: D. Foley

Drilling Method: Hand Geoprobe

Sampling: Various intervals with dedicated acetate Sleeves

Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/6"	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry 0-6" Dark brown-black Coal, Ash, Brick, Bits of shredded plastic S-2: Dry 0-6" Dark brown Coal, Ash, Brick, Glass w/ f Sand and Silt 6-12" Tan-black F SAND & SILT w/ Ash, Coal, Brick	Samples collected for laboratory analysis: B-11-r5B (0-1') PCBs B-11-r5B (1-3') PCBs B-11-r5B (0-3') EPH with target PAHs, vanadium	No wells were constructed during this event
	2	24/12"	1-3'					
10'								
15'								
20'								
25'								

25'



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Braintree, MA

Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-11-r5C

Date of Work: 3-30-2016 **Sheet:** 1 of 1
Weather: 40°F's, overcast
Boring Location: Southwest of B-11 on a 5' radius

Boring Contractor: New England Geotech, LLC

Foreman: Maynor


GEC Engineer: D. Foley


Drilling Method: Hand Geoprobe

Sampling: Various intervals with dedicated acetate Sleeves


Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/4"	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry 0-4" Black Coal, Ash, Brick, Bits of Plas- tic, glass S-2: Dry 0-12" Dark brown-black Coal, Ash, Brick w/ some F Sand and Silt	Samples collected for laboratory analysis: B-11-r5C (0-1') PCBs B-11-r5C (1-3') PCBs B-11-r5C (0-3') EPH with target PAHs, vanadium	No wells were constructed during this event
	2	24/12"	1-3'					
10'								
15'								
20'								
25'								

25'



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Braintree, MA

Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-12

Date of Work: 3-23-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: North-western portion of the courtyard,
past the convergence of Picker and Boiler house, past the tin
Shack

Boring Contractor: GEC

Foreman:


GEC Engineer: D. Foley


Drilling Method: Auger and Hand-Geoprobe


Sampling: Various intervals with dedicated acetate Sleeves

Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/pile	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry Dark brown-black f SAND & SILT, w/ Coal, w Ash, ~ 2" layer of Bits of Plastic	Samples collected for laboratory analysis: B-12 (0-1') PCBs B-12 (1-3') PCBs B-12 (0-3') EPH w/ PAHs, Arsenic, Lead, Vanadium B-12 (3-6') EPH w/PAHs , Arsenic, Lead, Vanadium	No wells were constructed during this event
	2	24/pile	1-3'					
	3	12/24"	3-5'					
	4	8/12"	5-6'					
10'						S-3: Dry 0-8" Gray f SAND w/ trace Gravel, Pebble 8-12" Urban fill, Sand and Silt, w/ Brick, Coal, Ash		
15'						S-4: Moist 0-8" Dark Brown F SAND & SILT w/ Coal, Brick, Ash, Dust		
20'								

25'



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60 Brooks Drive
Braintree, MA

Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6080
Boring Log ID: B-13

Date of Work: 3-23-2016

Sheet: 1 of 1

Weather: 40°F's, overcast

Boring Location: North-western portion of the courtyard,
past the convergence of Picker and Boiler house, past the tin
Shack

Boring Contractor: GEC

Foreman:


GEC Engineer: D. Foley


Drilling Method: Auger and Hand-Geoprobe


Sampling: Various intervals with dedicated acetate Sleeves

Screening Equipment: MiniRae 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	12/pile	0-1'	URBAN FILL	Due to recovery no Headspace was collected	S-1: Dry Dark brown-black f SAND & SILT, w/ Coal, w Ash, Bits of Plastic S-2: Dry Brown-black fine SAND & SILT w/ Bits of plastic, Brick, Coal, Ash, Glass S-3: Dry 0-8" Brown f-m-c SAND & SILT w/ Brick, Glass, Coal, Ash	Samples collected for laboratory analysis: B-13 (0-1') PCBs B-13 (1-3') PCBs B-13 (0-3') EPH w/ PAHs, Arsenic, Lead, Vanadium B-13 (3-6') EPH w/PAHs , Arsenic, Lead, Vanadium	No wells were constructed during this event
	2	24/pile	1-3'					
	3	8/24"	3-5'					
	4	6/12"	5-6'					
10'								
15'								
20'								

25'



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Project:
169.2 Bridge Street (courtyard),
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GEC project 1785-6100
Boring Log ID: B-14

Date of Work: 9-15-2016

Sheet: 1 of 1

Weather: 60°F's, mostly sunny

Boring Location Eastern Side of the Courtyard near the fuel vaults

Boring Contractor: New England Geotech, LLC

Drilling Method: Track-mounted Geoprobe


Drilling Foreman: Ryan


Sampling: Continuous in five foot intervals with dedicated acetate Sleeves


GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

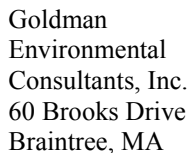
Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/24	0-5'	Urban Fill	0.0 ppm	S-1: (dry) 0-24" Coal, Ash, Brick 12-24" # 6 fuel oil Smear started	Samples collected for laboratory analysis: B-14 (0-5') Comp B-14 (5-10') Comp B-14 (10-15') Comp B-14 (10-15') VOCs B-14 (15-16.5') Comp	No wells were constructed during this event
10'	2	60/9	5-10'		0.0 ppm	S-2: (dry) 0-9" Dark black URBAN FILL saturated w/ #6 product		
15'	3	60/12	10-15'		6.9 ppm	S-3: (dry) 0-2" Light brown f powdered SILT 10-12" Saturated URBAN FILL material. Fuel oil odor		
	4	18/12	15-16.5'	REFUSAL	5.1 ppm	S-4: (dry) 0-6" Pebble, oil & SAND & SILT 6-12" Very fine SILT, # 6 oil product, also exhibits "marine fishy" odor in center of gray silt		



Boring Log ID: B-14A

Boring Location Eastern end of courtyard near fuel oil vaults

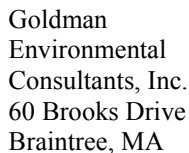
Sheet: 1 of 1

GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



Boring Log ID: B-15

Sheet: 1 of 1

Boring Location Eastern end of courtyard near fuel oil vaults

GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



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Project:
169.2 Bridge Street (courtyard),
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GEC project 1785-6100
Boring Log ID: B-16

Date of Work: 9-15-2016 **Sheet:** 1 of 1
Weather: 60°F's, mostly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/40	0-5'	SAND & SILT	0.0 ppm	S-1: (dry) 0-17" Brown SILT & SAND w/ Pebbles, Gravel, Brick, Coal, Ash 17-32" Black SAND & SILT w/ Pebble, Gravel, and coal Dust 32-33" Red powdered Sandstone 33-34" Yellow powdered Sandstone 34-40" Black Coal Dust w/ SAND & SILT, Peb- ble, Gravel	Samples collected for laboratory analysis: B-16 (0-5') PCBs B-16 (5-10') Asbestos, Held for PCBs B-16 (10-15') EPH and PAH, Held for PCBs	No wells were constructed during this event
10'	2	60/27	5-10'		2.2 ppm	S-2: (dry) 0-3" Black coal Dust 3-5" Yellow Sandstone 5-13" URBAN FILL, Coal, Brick, Gravel 13-15" Coal, Dust 15-22" Light gray SAND w/ Gravel/pebble, some Urban Fill 22-27" Brown tran f SAND & SILT w/ tr Pebble (moist)		
15'	3	60/28	10-15'		7.4 ppm	S-3: (dry) 0-7" Brown tan f SAND & SILT w/ tr Pebble (moist), tight 7-11" Brown f SAND & SILT w/ Gravel 11-23" Gray busted rock w/ SAND & SILT 23" Dark brown SAND & SILT, Busted Rock, exhibits petroleum odor 23-28" Broken		
	4	24/0	15-17'	REFUSAL		S-4: (dry) Refusal at 17', no recovery		

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GEC project 1785-6100

Boring Log ID: B-17

Date of Work: 9-15-2016 **Sheet:** 1 of 1
Weather: 60°F's, mostly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



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Project:
169.2 Bridge Street (courtyard),
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GEC project 1785-6100
Boring Log ID: B-18

Date of Work: 9-15-2016 **Sheet:** 1 of 1
Weather: 60°F's, mostly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/31	0-5'	SAND & SILT	0.0 ppm	S-1: (dry) 0-4" Gray f SAND w/ Pebbles 4-11" Black Coal Dust w/ gravel, Pebbles, f SAND & SILT, bits of Plastic 11-13" Red brown black Brick & Coal Dust w/ f SAND & SILT, bits of Coal and Ash 13-17" Black Coal Dust & Ash, Brick, bits of Glass 17-22" Brown Coal Dust w/ f SAND & SILT, some Pebble, tr Organic (rock) 22-31" Black Coal Dust/Bits of Ash, Brick, tr Pebble S-2: (dry) 0-11" Black Coal Dust, Orange stripe, F SAND/ DUST w/ Ash, Brick, Slag 11-12" Brown f SAND & SILT w/ Pebbles S-3: (dry) 0-5" Brown f SAND & SILT w/ pulverized rock, some COAL DUST, Brick, Ash 5-15" Brown/black COAL DUST w/ pulverized rock, SAND & SILT 15-28" Gray pulverized Rock w/ SAND, 1/2 inch roots at 25"	Samples collected for laboratory analysis: B-18 (0-5') PCBs B-18 (5-10') EPH and PAH, PCBs B-18 (10-14') PCBs	No wells were constructed during this event
10'	2	60/12	5-10'		0.0 ppm			
15'	3	60/28	10-14'		0.0 ppm			
				REFUSAL	0.0 ppm			



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Project:
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Boring Log ID: B-19

Date of Work: 9-15-2016 **Sheet:** 1 of 1
Weather: 60°F's, mostly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/39	0-5'	Urban Fill	0.0 ppm	S-1: (dry) 0-7" Black URBAN FILL , Brick, Coal, Ash 7-9" c SAND & SILT to Gravel 9-15" URBAN FILL Coal Dust w/ Brick, Ash tr Pebble/Gravel 15-19" Broken Brick 19-39" Black Coal Dust w/ Brick/Concrete, Pebble & Gravel, SAND & SILT	Samples collected for laboratory analysis: B-19 (0-5') PCBs B-19 (5-10') Asbestos, EPH and PAH, PCBs B-19 (10-15') EPH and PAH, PCBs B-19 (15-17') EPH and PAH, PCBs	No wells were constructed during this event
	2	60/15	5-10'	SAND & SILT	0.0 ppm	S-2: (dry) 0-3" Black Coal Dust w/ tr Gravel 3-8" Broken rock w/ tr Coal Dust, SAND & SILT 8-11" Black Coal Dust w/ tr Gravel 11-15" Broken rock w/ tr Coal Dust, SAND & SILT		
	3	60/26	10-15'		0.0 ppm	S-3: (dry) 0-5" Broken rock 5-9" Gray tan broken rock, tr Coal Dust 9-26" Tan brown f-m-c SAND & SILT w/ Broken rock, tr Coal Dust		
	4	24/12	15-17'		0.0 ppm	S-4: (dry) 0-1" Broken rock 1-4" Dark brown SILT & SAND w/ tr Organics 4-12" Brown f SAND & SILT w/ Gravel/pebbles and Coal		
15'				REFUSAL				



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Project:
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Boring Log ID: B-20

Date of Work: 9-16-2016 **Sheet:** 1 of 1
Weather: 60°F's, partly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

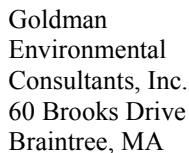
Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/12	0-5'	SAND & SILT	0.0 ppm	S-1: (dry) 0-10" Black COAL dust, SAND & SILT & asbe & bits of Brick 10-12" pulverized Brick	Samples collected for laboratory analysis: B-20 (0-5') PCBs B-20 (5-8') EPH and PAH, Held for PCBs	No wells were constructed during this event
5'	2	36/13	5-8'	REFUSAL	0.0 ppm	S-2: (dry) 0-4" Black Coal Dust & SAND & SILT & bits of Brick, Slag, Ash 4-6" brown f SAND 6-13" Black Coal Dust & Brick & SAND & SILT & ASH		
10'				REFUSAL				
15'				REFUSAL				



Boring Log ID: B-21

Sheet: 1 of 1

Boring Location Eastern end of courtyard near fuel vaults

GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



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Project:
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GEC project 1785-6100
Boring Log ID: B-22

Date of Work: 9-16-2016 **Sheet:** 1 of 1
Weather: 60°F's, partly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Truck-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/28	0-5'	SAND & SILT	0.0 ppm	S-1: (dry) 0-10" Brown Urban Fill, SAND & SILT w/ Coal, DUST, ASH, Concrete slag rock 11-14" Pulverized Brick 14-21" While yellow pulverized Sandstone and m-c SAND 21-25" pulverized Granite w/ m-c SAND & SILT 25-28" Brown SAND SILT Gravel w/ Brick, Coal	Samples collected for laboratory analysis: B-22 (10-15') EPH and PAH B-22 (15-20') EPH and PAH	No wells were constructed during this event
10'	2	60/24	5-10'		0.0 ppm	S-2: (dry) 0-2" Urban Fill SAND & SILT, Brick, Coal, Ash, Dust, Slag 2-4" Brick 4-24" Black COAL DUST w/ Brick, SAND & SILT, Ash, Slag		
15'	3	60/32	10-15'		0.0 ppm	S-3: (moist) 0-17" Dark brown Urban Fill, Coal, Ash, Brick, SAND & SILT 17-24" Brown gray fm-c SAND w/ Coal & Dust, tr Pebble 24-28" Wood 28-32" Brown gray fm-c SAND w/ Coal & Dust, tr Pebble		
	4	60/58	15-20'		17.3 ppm	S-4: (moist) 0-11" Brown black SAND SILT, Gravel, tr Organics, exhibits petrol odor (gasoline) 11-58" Uniform gray f-m-c SAND, tr Pebble (appears native), tr Rounded Riverstone		
				REFUSAL				



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Boring Log ID: B-23

Date of Work: 9-16-2016 **Sheet:** 1 of 1
Weather: 60°F's, partly sunny
Boring Location Eastern end of courtyard near fuel vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

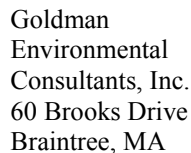
Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/40	0-5'	SAND & SILT	0.0 ppm	S-1: (dry) 0-10" Brown Painted wood chips, Urban Fill, Coal, Dust, Ash, SAND & SILT, Brick, Gravel, Con- crete 10-16" Brown Gray f-m-c SAND & Gravel 16-30" Black Coal, Ash, Brick, Dust, Slag 30-31" Tan brown f SAND 31-33" Black Coal, Dust, Brick, Slag, Ash 33-40" Tan brown f SAND w. some Gravel, tr Brick, Coal, Ash, Slag	Samples collected for laboratory analysis: B-23(5-9') EPH and PAH	No wells were constructed during this event
5'	2	48/40	5-9'	REFUSAL	0.0 ppm	S-2: (dry) Tan brown f-m SAND w/ Gravel, tr Brick, Coal, Slag, Ash		
10'				REFUSAL				
15'				REFUSAL				



Project:
169.2 Bridge Street (courtyard).
Lowell, MA
GEC project 1785-6100

Boring Log ID: B-24

Sheet: 1 of 1

Boring Location Eastern end of courtyard directly next to fuel vaults

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

[illegible]



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Project:
169.2 Bridge Street (courtyard),
Lowell, MA
GEC project 1785-6100
Boring Log ID: B-25

Date of Work: 9-16-2016 **Sheet:** 1 of 1
Weather: 60°F's, partly sunny
Boring Location Eastern end of courtyard near fuel oil vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan


GEC Staff: D. Foley


Drilling Method: Track-mounted Geoprobe


Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY:  = Interval sampled for analysis

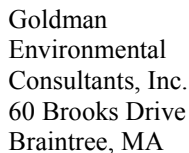
Cement Seal: 

Bentonite Seal: 

Sand Pack: 

Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
5'	1	60/19	0-5'	URBAN FILL	0.0 ppm	S-1: (dry) 0-8" URBAN FILL-similar constituents to all other subsurface conditions 8-19" URBAN FILL evidence of smearing	Samples collected for laboratory analysis: B-25 (0-5') comp B-25 (5-7.5') comp Soil included in Composite	No wells were constructed during this event
5'	2	36/21	5-7.5'	REFUSAL	0.0 ppm	S-2: (dry) 0-6" URBAN FILL w/ Sheen present 6-21" Pulverized Stone w/ SAND & SILT. No evidence of sheen/petrol		
10'								
15'								



Boring Log ID: B-26

Sheet: 1 of 1

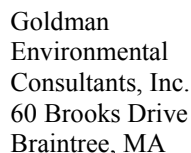
Boring Location Eastern end of courtyard near fuel oil vaults

GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



Boring Log ID: B-27

Boring Location Eastern end of courtyard near fuel oil vaults

Sheet: 1 of 1

GEC Staff: D. Foley

Screening Equipment: MiniRAE 3000 10.6 eV PID

Cement Seal:  Bentonite Seal:  Sand Pack:  Slotted Screen: 

[illegible]

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Project:
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GEC project 1785-6100

Boring Log ID: B-28

Date of Work: 9-16-2016 **Sheet:** 1 of 1
Weather: 60°F's, partly sunny
Boring Location Eastern end of courtyard near fuel oil vaults

Boring Contractor: Crawford Drilling Services

Drilling Foreman: Ryan

GEC Staff: D. Foley

Drilling Method: Track-mounted Geoprobe

Sampling: Continuous in five foot intervals with dedicated acetate Sleeves

Screening Equipment: MiniRAE 3000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Bentonite Seal: Sand Pack: Slotted Screen:

[illegible]



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Project:

J-M Developer, LSI Picker Basement,
Lowell, MA
GEC project 1785-6070

Boring Log ID: HB-1/SVP-1

Dates of Work: 2-12-2016

Sheet: 1 of 1

Weather: 10s°F Mostly Sunny

Boring Location: Picker Basement ~ 8' from north wall, ~20' from eastern wall

Boring Contractor: New England Geotech

Foreman: Keith

GEC Engineer: Andrew Foley

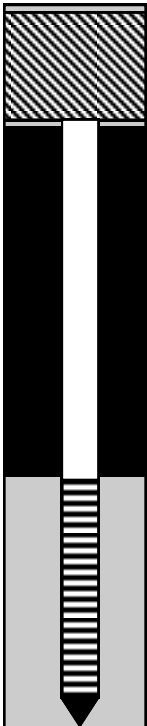

Drilling Method: Hand GeoProbe

Sampling: Continuous in two foot intervals with dedicated acetate sleeves

Screening Equipment: Mini-Rae 2000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Gravel/Radon :  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
0'						Proposed 1st Floor Grade		
						Vapor Barrier Clean Gravel– Radon System		
						To be filled with flow able Gypcrete		
5'	1	24/12"	0-2'	SILT/ SAND/ FILL	0-2' = 1.6 ppm	S-1: No odor, Moist 0-8"Brown-tan SILT w/ fine Sand 8-12" Dark brown-tan SILT w / Ash, Coal	Sample collected for laboratory analysis: B-1 (0-5') VOCs w/ Targets, EPH w/ Targets	
	2	24/6"	2-4'		2-4'= 1.7 ppm	S-2: No odor, Moist 0-6" Brown SILT w/ fine Sand trace Pebble, trace Ash, coal		
	3	24/0"	4-5'		4-5'= 1.5 ppm	S-3: No odor, Moist No recovery, Small Pile fine SAND		
10'					Assumed Water Table		B-1 completed as a 1" soil vapor well to an approximate depth of 15' BSG with 5' of screen and 10' of riser. Designated SVP-1	



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Project:

J-M Developer, LSI Picker Basement,
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GEC project 1785-6070

Boring Log ID: HB-2/SVP-2

Dates of Work: 2-12-2016

Sheet: 1 of 1

Weather: 10s°F Mostly Sunny

Boring Location: Picker Basement ~ 35' from north wall,
~12' from eastern wall

Boring Contractor: New England Geotech

Foreman: Keith

GEC Engineer: Andrew Foley

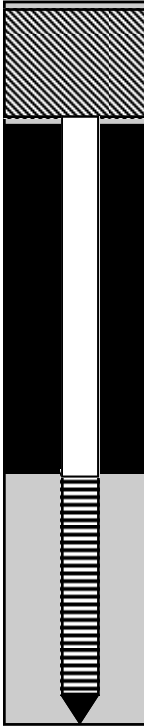

Drilling Method: Hand GeoProbe

Sampling: Continuous in two foot intervals with dedicated acetate sleeves

Screening Equipment: Mini-Rae 2000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Gravel/Radon : Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION				
	No.	Pen./Rec.	Depth									
0'						Proposed 1st Floor Grade						
						Vapor Barrier Clean Gravel- Radon System						
						To be filled with flow able Gypcrete						
										Current basement Floor		
5'	1	24/8"	0-2'	SILT/ SAND/ FILL	0-2' = 2.1 ppm	S-1: No odor, Moist 0-4" Brown-tan fine SAND & SILT 4-6" Broken concrete 6-8" Tan-brown fine SAND w/ tr. Ash, bits of coal	Sample collected for laboratory analysis: B-2 (2-5') VOCs w/ Targets, EPH w/ Targets					
	2	24/6"	2-4'						2-4' = 2.3 ppm	S-2: No odor, Moist 0-6" Dark brown/ black w/ white fine SAND & SILT w/ tr Pebble, ash, bits of coal		
	3	24/10"	4-5'								4-5' = 2.3 ppm	S-3: No odor, Moist 0-5" Brown-tan fine SAND w/ Silt trace Pebble 5-6" Black ASH w/ bits of coal 6-10" Brown fine SAND w/ Silt, trace pebble
10'				 Assumed Water Table			B-2 completed as a 1" soil vapor well to an approximate depth of 15' BSG with 5' of screen and 10' of riser. Designated SVP-2					



Assumed
Water
Table



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Project:

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GEC project 1785-6070

Boring Log ID: HB-3/SVP-3

Dates of Work: 2-12-2016

Sheet: 1 of 1

Weather: 10s°F Mostly Sunny

Boring Location: Picker Basement ~ 60' from north wall, ~7' from eastern wall

Boring Contractor: New England Geotech

Foreman: Keith

GEC Engineer: Andrew Foley

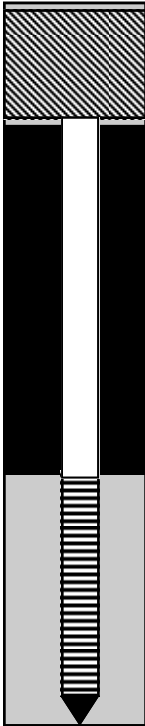

Drilling Method: Hand GeoProbe

Sampling: Continuous in two foot intervals with dedicated acetate sleeves

Screening Equipment: Mini-Rae 2000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Gravel/Radon : Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
0'						Proposed 1st Floor Grade		
						Vapor Barrier Clean Gravel– Radon System		
						To be filled with flow able Gypcrete		
5'	1	24/11"	0-2'	SILT/ SAND/ FILL	0-2' = 2.1 ppm	S-1: No odor, Moist 0-4" Tan fine SAND w/ trace Silt 4-8"Tan w/ black fine SAND w/ tr ash and coal 8-11" Brown fine SAND w/ Silt trace ash and coal	Sample collected for laboratory analysis: B-3 (2-7') VOCs w/ Targets, EPH w/ Targets	
	2	24/14"	2-4'					
	3	24/0"	4-6'					
10'	4	24/6"	6-7.5'	 Assumed Water Table	2-4' = 2.3 ppm	S-2: No odor, Moist 0-4" Tan–brown fine SAND & BRICK w/ tr. Pebble, tr. Coal 4-14" Brown fine SAND & SILT w/ tr. Pebble		B-3 completed as a 1" soil vapor well to an approximate depth of 17' BSG with 5' of screen and 12' of riser. Designated SVP-3



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Braintree, MA

Project:

J-M Developer, LSI Picker Basement,
Lowell, MA
GEC project 1785-6070

Boring Log ID: HB-4/SVP-4

Dates of Work: 2-12-2016

Sheet: 1 of 1

Weather: 10s°F Mostly Sunny

Boring Location: Picker Basement ~ 8' from north wall, ~8' from eastern divider wall

Boring Contractor: New England Geotech

Foreman: Keith

GEC Engineer: Andrew Foley

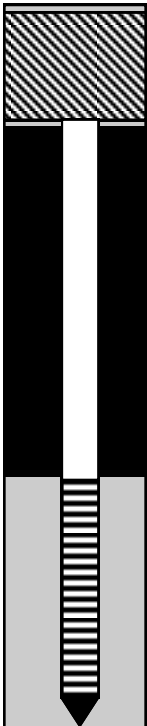
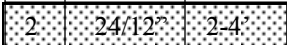


Drilling Method: Hand GeoProbe

Sampling: Continuous in two foot intervals with dedicated acetate sleeves

Screening Equipment: Mini-Rae 2000 10.6 eV PID

KEY:  = Interval sampled for analysis

Cement Seal:  Gravel/Radon :  Sand Pack:  Slotted Screen: 

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION	
	No.	Pen./Rec.	Depth						
0'						Proposed 1st Floor Grade			
						Vapor Barrier Clean Gravel– Radon System			
						To be filled with flow able Gypcrete			
5'	1	24/0"	0-2'	SILT/ SAND/ FILL	0-2' = N/A	S-1: No recovery “void space”	Sample collected for laboratory analysis: B-4 (2-5') VOCs w/ Targets, EPH w/ Targets		
	2	24/12"	2-4'						
	3	24/0"	4-5'						
10'					Assumed Water Table	S-2: No odor, Moist 0-10” Brown-black fine SAND & COAL & ASH w/ tr. Pebble 10-12” Tan-gray SILT w/ fine Sand, w/ Clay S-3: No sleeve recovered Small pile of COAL & ASH, Rock, some fine Sand & Silt, tr. Clay	B-4 completed as a 1” soil vapor well to an approximate depth of 15’ BSG with 5’ of screen and 10’ of riser. Designated SVP-4		



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Project:

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GEC project 1785-6070

Boring Log ID: HB-5/SVP-5**Dates of Work:** 2-12-2016**Sheet:** 1 of 1**Weather:** 10s°F Mostly Sunny**Boring Location:** Picker Basement ~ 32' from north wall,
~40' from eastern divider wall**Boring Contractor:** New England Geotech**Foreman:** Keith**GEC Engineer:** Andrew Foley**Drilling Method:** Hand GeoProbe**Sampling:** Continuous in two foot intervals with dedicated acetate sleeves**Screening Equipment:** Mini-Rae 2000 10.6 eV PID**KEY:** = Interval sampled for analysis

Cement Seal: Gravel/Radon: Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION
	No.	Pen./Rec.	Depth					
0'						Proposed 1st Floor Grade		
						Vapor Barrier Clean Gravel- Radon System		
						To be filled with flow able Gypcrete		
						Current basement Floor		
1	24/10"	0-2'	SILT/ SAND/ FILL	0-2' = 3.1 ppm	S-1: No odor, Moist 0-5" Brown-tan-gray fine SAND w/ Silt & pulverized concrete 5-10" Red-brown BRICK w/ fine Sand & Silt w/ tr. Coal	Sample collected for laboratory analysis: B-5 (0-5') VOCs w/ Targets, EPH w/ Targets		
2	24/0"	2-4'						
3	24/0"	4-5'						
5'				2-4' = 3.2 ppm	S-2: No sleeve recovered Small pile brown fine SAND & SILT w/ tr. Brick tr. Clay			
				4-5' = 2.0 ppm	S-3: No sleeve recovered Small pile of COAL & ASH, Rock, some fine Sand & Silt			

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Boring Log ID:HB-6/SVP-6

Dates of Work: 2-12-2016

Sheet: 1 of 1

Weather: 10s°F Mostly Sunny

Boring Location: Picker Basement ~ 40' from north wall,
~26' from eastern divider wall

Boring Contractor: New England Geotech

Foreman: Keith

GEC Engineer: Andrew Foley

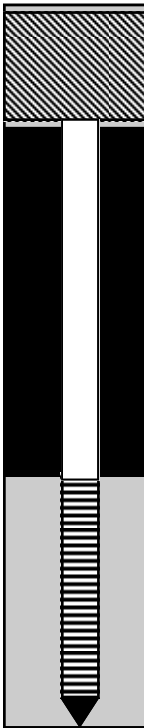

Drilling Method: Hand GeoProbe

Sampling: Continuous in two foot intervals with dedicated acetate sleeves

Screening Equipment: Mini-Rae 2000 10.6 eV PID

KEY: = Interval sampled for analysis

Cement Seal: Gravel/Radon : Sand Pack: Slotted Screen:

Depth	SAMPLE			Strata Change	Sample Screening	SAMPLE DESCRIPTION	ADDITIONAL NOTES	WELL CONSTRUCTION		
	No.	Pen./Rec.	Depth							
0'						Proposed 1st Floor Grade				
						Vapor Barrier Clean Gravel– Radon System				
						To be filled with flow able Gypcrete				
										Current basement Floor
5'	1	24/10"	0-2'	SILT/ SAND/ FILL	0-2' = 2.5 ppm	S-1: No odor, Moist 0-7" Tan fine SAND 7-10" Brown-gray fine SAND tr. Clay tr. Coal	Sample collected for laboratory analysis: B-6 (0-4') VOCs w/ Targets, EPH w/ Targets			
	2	24/5"	2-4'						2-4'= 2.4 ppm	S-2: No odor, Moist 0-5" Tan-brown fine SAND w/ tr. Coal, Ash, tr. Silt, tr. Pebble
10'					Assumed Water Table		B-6 completed as a 1" soil vapor well to an approximate depth of 15' BSG with 5' of screen and 10' of riser. Designated SVP-6			